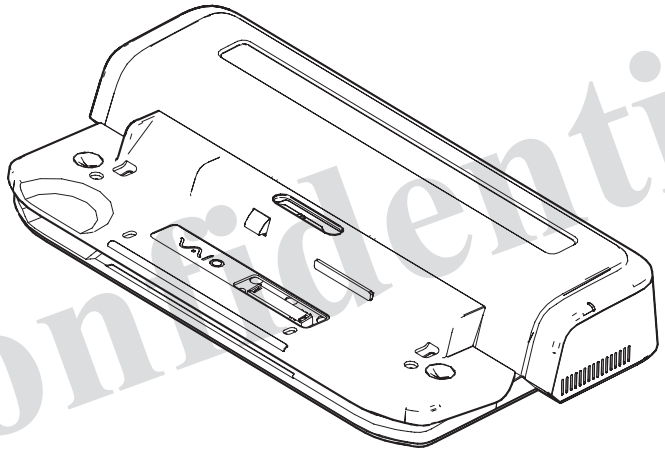
VGP-PRA1

SERVICE MANUAL

Ver 2-2004E

Revision History

Area	Model	Line up	
Japanese	Japanese	VGP-PRA1	
American	US Canadian	VGP-PRA1	⚠[MA]
European	AEP UK	VGP-PRA1	
Asian/Oceania/ South Africa	International	VGP-PRA1	⚠[MA]



Illust : VGP-PRA1

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- 本機の仕様および外観は，改良のため予告なく変更することがありますが，ご了承ください。

PORT REPLICATOR

SONY

9-876-376-02

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Caution Markings for Lithium/Ion Battery - The following or similar texts shall be provided on battery pack of equipment or in both the operating and the service instructions.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION: The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F) or incinerate.
Dispose of used battery promptly.
Keep away from children.

CAUTION: Changing the back up battery.
- Overcharging, short circuiting, reverse charging, multilation or incineration of the cells must be avoided to prevent one or more of the following occurrences; release of toxic materials, release of hydrogen and/or oxygen gas, rise in surface temperature.
- If a cell has leaked or vented, it should be replaced immediately while avoiding to touch it without any protection.

Service and Inspection Precautions

1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

2. Use designated parts only

The set's components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts possess the same safety characteristics as the originals. Also remember that the ⚠ mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

3. Always follow the original design when mounting parts and routing wires

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout.

4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage, and confirm safety.

5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

6. When handling flexible print boards...

- The temperature of the soldering-iron tip should be about 270°C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

**ATTENTION AU COMPOSANT AYANT RAPPORT
À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

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History of the changes is shown as the "Revision History" at the end of this data.

変更履歴は，"Revision History" として，本データ末に記載してあります。

CHAPTER 1.
SPECIFICATIONS

接続端子	ポートリプリケーターコネクタ 専用コネクタ（1） USB Type-Aコネクタ（4）* 外部ディスプレイ出力 MONITOR：アナログRGB、 ミニD-SUB 15ピン（1） DVI-D：DVIコネクタ（1） 光デジタル音声出力 角形光コネクタジャック（1） （EIAJ CP1201/IEC958準拠） ネットワークコネクタ RJ-45 コネクタ（1）* ステレオ音声入力 ピンジャック（1） ステレオ音声出力 ピンジャック（1） コンポジットビデオ出力 NTSC/PAL対応、ピンジャック（1） S 映像出力 NTSC/PAL対応、S 映像出力端子（1） プリンタポート D-SUB 25 ピン（1）
電源	ACアダプタ
動作温度	5℃～35℃（温度勾配10℃／時以下）
動作湿度	20%～80%（結露のないこと） ただし35℃における湿度は65%以下 （湿球温度29℃以下）
保存温度	20 ℃～60℃（温度勾配10℃／時以下）
保存湿度	10%～90%（結露のないこと） ただし60℃における湿度は20%以下 （湿球温度35℃以下）
最大外形寸法	約370×63×198 mm （幅／高さ／奥行き）（突起部含まず）
質量	約1420 g
付属品	保証書（1） 取扱説明書（1）

Connectors	Port replicator connector: custom connector (1) USB: Type-A connector (4) * External display output: MONITOR: Analog RGB ,mini D-sub 15-pin (1) DVI-D: DVI connector(1) Optical digital audio output: Square optical connector (1) (Complies with EIAJ CP1201/IEC958) Network connector: RJ-45 connector (1) * Stereo audio input: Phono jack (1) Stereo audio output: Phono jack (1) Composite video output: NTSC/PAL compatible, Phono jack (1) S Video output: NTSC/PAL compatible, S Video output terminal (1) Printer port: D-sub 25 pin (1) * The specifications are the same as those of the notebook you are using. For details, refer to the manuals provided with your notebook.
Power requirements	AC adapter
Operating temperature	41˚F to 95˚F (5˚C to 35˚C) (temperature gradient less than 18˚F (10˚C)/hour)
Operating humidity	20% to 80% (not condensed), provided that humidity is less than 65% at 95˚F (35˚C) (hygrometer reading of less than 84˚F (29˚C))
Storage temperature	–4˚F to 140˚F (–20˚C to 60˚C) (temperature gradient less than 18˚F (10˚C)/hour)
Storage humidity	10% to 90% (not condensed), provided that humidity is less than 20% at 140˚F (60˚C) (hygrometer reading of less than 95˚F (35˚C))
Dimensions	Approx. 14.6 × 2.5× 7.8 inches (w/h/d) (Approx. 370 × 63 × 198 mm)
Mass	Approx. 50.1 oz. (1420 g)
Supplied accessories	Operating instructions (1)

• The trademarks or registered trademarks of above table, refer to page 2.

• 本表中の商標・登録商標については、2 ページをご参照ください。

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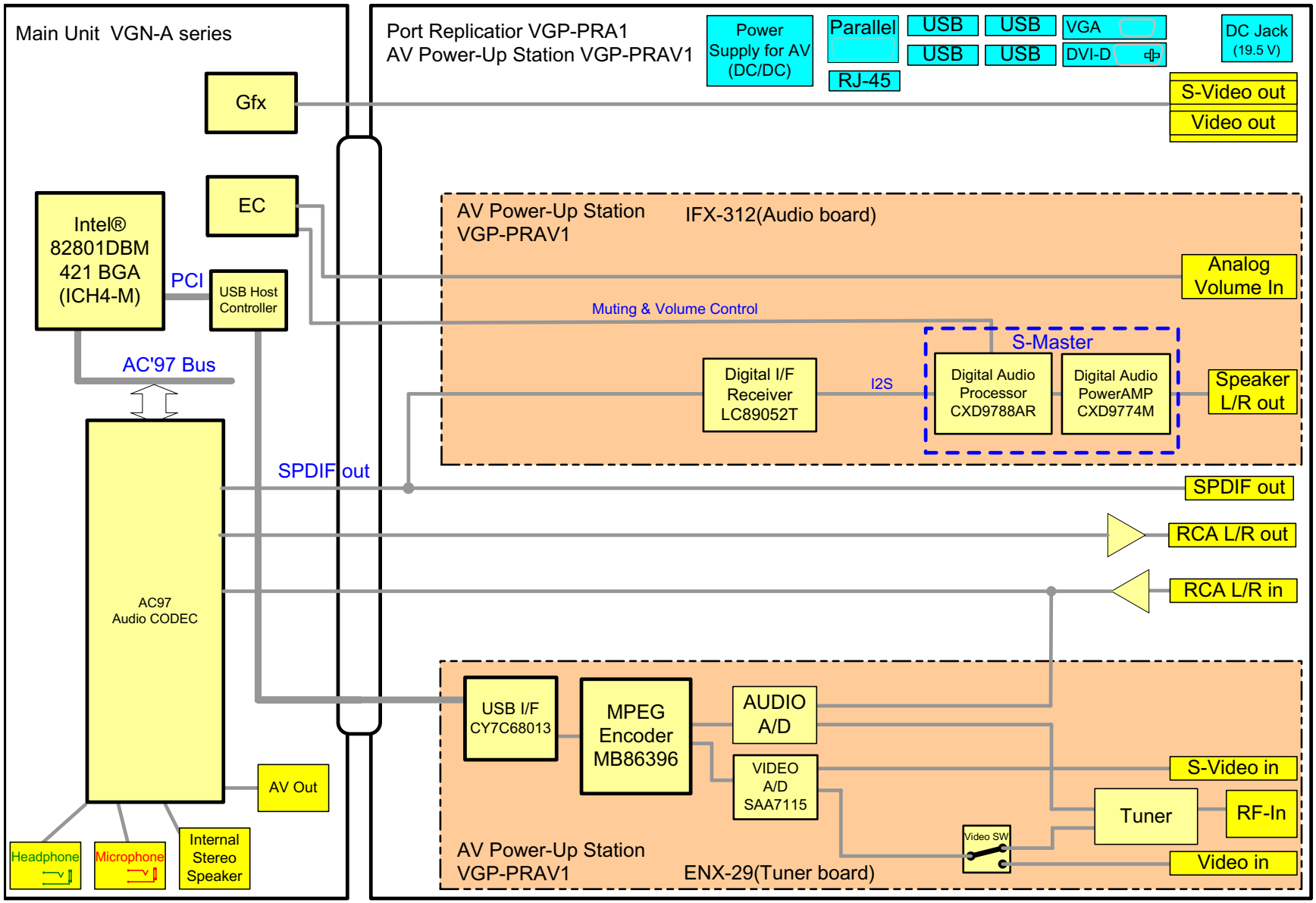
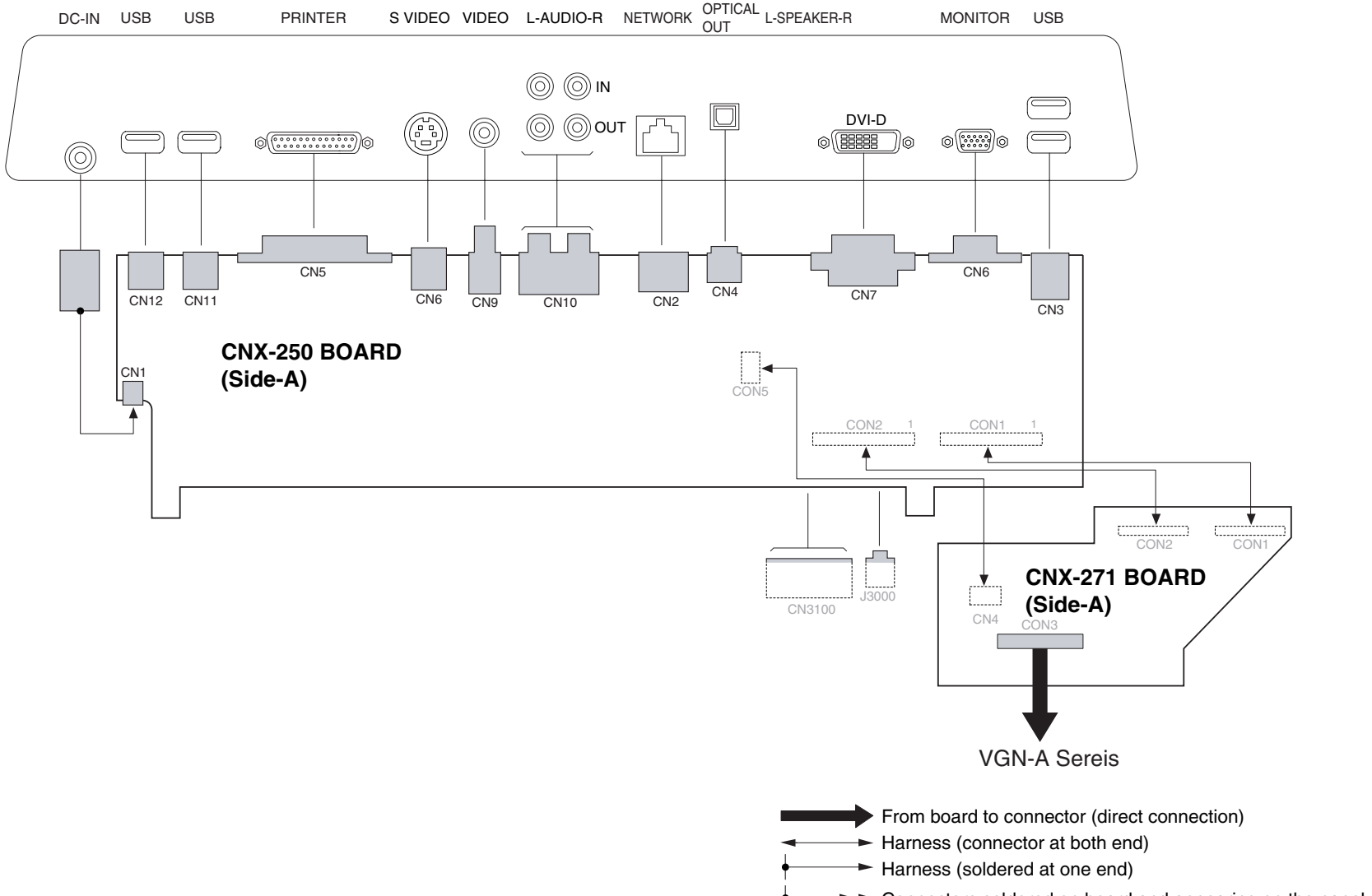


Confidential

3-1. MS-1 Model



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CHAPTER 4.
EXPLODED VIEWS AND PARTS LIST

• The parts list is compiled by blocks of a palmrest and bottom etc. The sections of the parts list are different depending on the model. Please refer to list of contents shown in the below.

• 分解図と部品表は，パームレスト，ボトムなどのブロックごとに分かれています。機種によって部品表のセクションが異なりますので，詳細は右下の一覧表を参照してください。

Section — Page

Main Section

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Accessories

A-1 4-3

NOTE:

• Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
• The mechanical parts with no reference number in the exploded views are not supplied.
• When two or more parts are shown, use the part described first as the main part.
• The parts marked " $ " are the High Value Modules (HVM).
• The parts marked " # " are the parts on which barcode label is attached.
  For the barcode label, refer to CHAPTER 5.

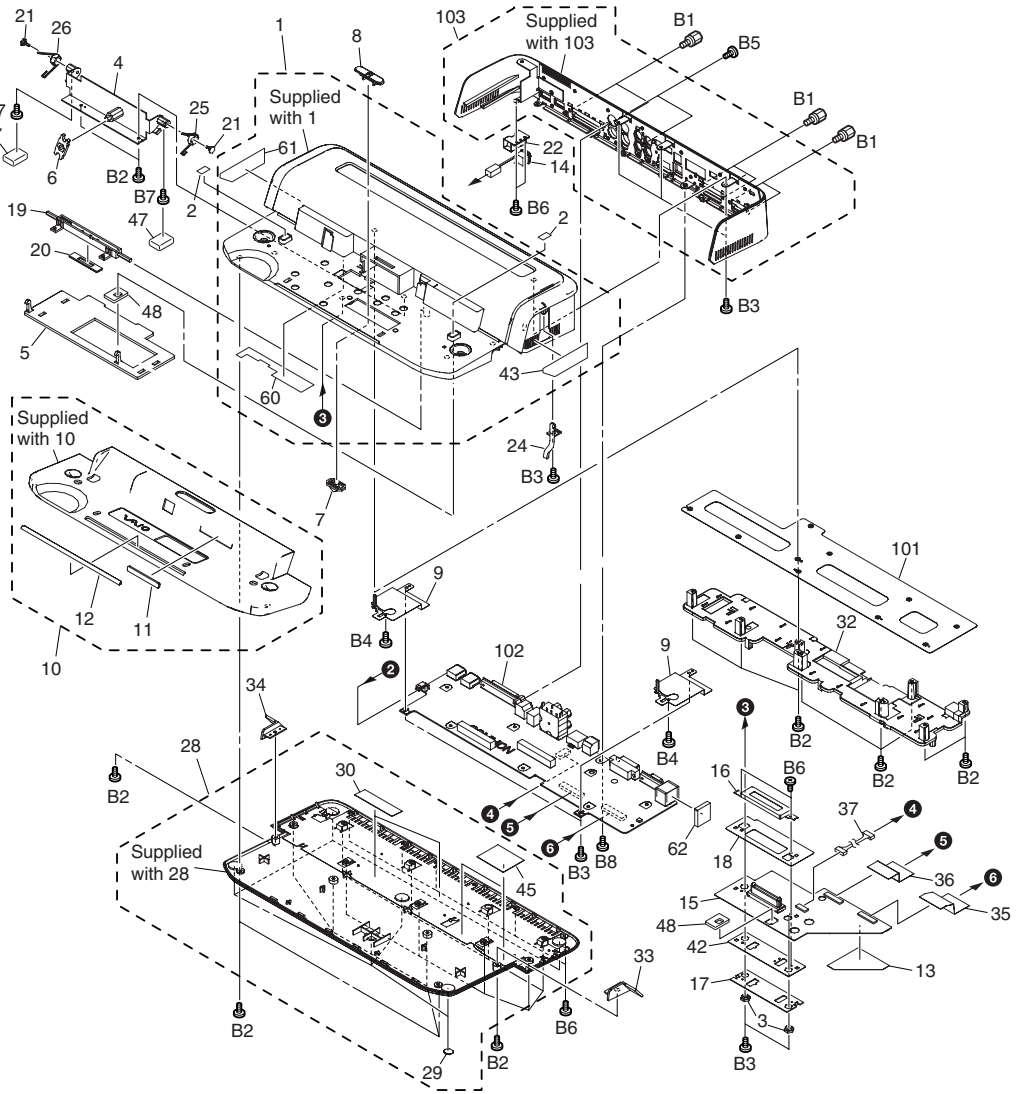
【使用上の注意】

• ＊ 印の部品は常備在庫しておりません。
• 図面番号のない部品は供給しません。
• 併記部品の場合，上部記載部品をメイン部品として使用してください。
• 部品名称の前に$ 印のついた部品は，High Value Module (HVM)です。
• 商品名称の前に# 印のついた部品は，バーコードラベル貼付部品です。
  バーコードラベルについてはCHAPTER5を参照してください。

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro pécifié.

⚠ 印の部品，または ⚠ 印付きの点線で囲まれた部品は，安全性を維持するために重要な部品です。従って交換時は，必ず指定の部品を使用してください。

MS-1. Main Section



Ref.No.	Part No.		Description
1	X-4626-667-1		SUB HOUSING UPPER BPR ASSY
2	4-682-689-01		BPR MYLAR FOOT
3	4-682-693-01		BPR CAP BOSS DOCK CONN
4	4-682-694-01		BPR BRACKET ARM TRAY
5	4-682-695-01		BPR HOOK FRONT
6	4-682-697-01		BPR ARM SLIDE HOOK YOKO
7	4-682-698-01		BPR KNOB HOOK RELEASE
8	4-682-699-01		BPR KNOB HOOK RELEASE BOTTON
9	4-682-700-01		BPR PIN GND
10	X-4626-672-1		SUB HOUSING TRAY BPR ASSY
11	4-682-721-01	&	BPR CUSHION REAR
12	4-682-720-01	&	BPR CUSHION FRONT
13	2-048-435-01		BPR MYLAR FPC
14	A-1058-415-A		HARNESS, DC
15	A-1059-670-A	$	COMPLETE PWB CNX-271
16	4-682-690-01		BPR PLATE DOCK CONN UPPER
17	4-682-691-01		BPR PLATE DOCK CONN BOTTOM
18	2-048-436-01		BPR MYLAR SHIELDING
19	X-2021-564-1		BPR ASSYSUB CAM SLIDE HOOK
20	2-048-437-01		BPR SPONGE CAM SLIDE HOOK
21	4-682-709-01		BPR ARM TRAY PIN
22	4-682-712-01		BPR BRACKET DC
24	4-682-708-01		BPR LIGHT GUIDE LED
25	4-682-714-01		BPR SPRING TRAY R
26	4-682-715-01		BPR SPRING TRAY L
28	X-4626-669-1	#	SUB HOUSING BOTTOM BPR ASSY
29	4-682-703-01	&	BPR RUBBET FOOT
30	2-048-440-01		APR MYLAR B2B CONNECTOR
32	X-4626-671-1		SUB FRAME BPR ASSY
33	4-682-710-01		BPR COVER RIGHT HOUSING UPPER

Ref.No.	Part No.		Description
34	4-682-711-01		BPR COVER LEFT HOUSING UPPER
35	A-1058-418-A		PWB (60P), FLEXIBLE PRINT A
36	A-1058-419-A		PWB (60P), FLEXIBLE PRINT B
37	A-1058-420-A		CABLE, ETHER
42	2-048-439-01		BPR ENFORCE PLATE
43	2-103-312-01		MYLAR TOP SHIELD R
45	2-103-314-01		MYLAR 34x40
47	2-103-316-01		GASKET 7x10x2
48	2-103-317-01		MYLAR HOOK FRONT
60	2-048-434-01		BPR MYLAR BRACKET ARM TRAY
61	2-103-313-01		BPR MYLAR TOP SHIELD L
62	2-148-338-01		BPR SPONGE USB 2 PORT
101	4-682-713-01		DUMMY BOARD BPR DUMMY
102	A-1059-669-A	$	COMPLETE PWB CNX-250B
103	X-4626-670-1		SUB COVER IO BIZ BPR ASSY
B1	4-635-966-21		SCREW(HEX)
B2	4-671-504-11	<&>	SCREW, TAPPING +P2.6
B3	3-906-376-01		T2.6x6L(P)W-NI
B4	4-639-112-31		SCREW M2x4
B5	2-048-677-01		SCREW M2x2L(I) W-NI, NY
B6	4-641-726-21		SCREW(M2), SPECIAL HEAD
B7	4-671-538-01		SCREW(M2x4), SPECIAL HEAD
B8	4-635-301-11		SCREW M3x4

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A-1. Accessories

Ref.No.	Part No.		Description
	2-050-356-01	&	MANUAL,INSTRUCTION(J)
	2-050-356-11	&	MANUAL,INSTRUCTION(EU/AM/AO) ⚠1 [MA]

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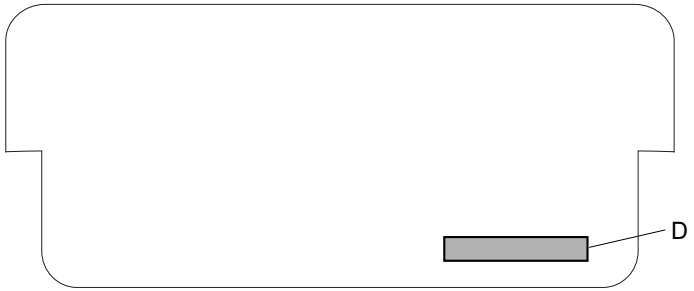
5-1. The Barcode Label

The hatched portion of the barcode label is used as the repair data.
バーコードラベルの網掛け部は, 修理データとして使用しています。



A :Parts No.
B :Serial No.
C :Revision No.
D :Product code
E :Maker Barcode
F :Global User ID (iLink)
G :Mac Address
□ :Barcode

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List of VGP-PRA Series (As of May, 2004)

Service Manual Parts No.	Model Name			
	J	AM	EU	AO
9-876-376-XX	VGP-PRA1	VGP-PRA1 ☜	VGP-PRA1	VGP-PRA1 ☜

☜ : Additional Models

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English / Japanese
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Revision History

Suffix	Ver.	Date	Contents	QM No.
-01	Ver.1	2004.05.10	First Edition	
-02	Ver.2	2004.05.31	**Front Page (Model Line Up), Page 4-3, Back Cover**	N2004_010AA

< Remarks >